

**WHAT IS CLAIMED IS:**

1. An electrophoresis apparatus comprising:
  - a plurality of capillaries;
  - a voltage applier applying voltage between both ends of the capillaries;
  - a laser light source irradiating a laser; and
  - a fluorescent detector detecting a fluorescence emitted from inside of the capillaries,wherein each of capillaries comprising a first region where it is coated with a polymer, a second region where a surface of the capillary being exposed for a predetermined length in the longitudinal direction, and a third region provided between the first and second regions, covered with a tapered polymer coating whose thickness becomes thinner from the first region to the second region, wherein a slope of the surface of the coating of the third region makes an angle of 70 degrees or less with the longitudinal direction of the capillary.
2. An electrophoresis apparatus according to claim 1, wherein a material of the tapered polymer coating is polyimide.
3. An electrophoresis apparatus according to claim 1, wherein the predetermined length is in a range of 0.1 mm to 10 mm.